

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Problem Image Mailbox.**

McGraw-Hill DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS

Fourth Edition



Sybil P. Parker

EDITOR IN CHIEF

McGRAW-HILL BOOK COMPANY

New York

St. Louis

San Francisco

Auckland	Bogotá
Caracas	Colorado Springs
Hamburg	Lisbon
London	Madrid
Mexico	Milan
Montreal	New Delhi
Oklahoma City	Panama
Paris	San Juan
São Paulo	Singapore
Sydney	Tokyo
	Toronto

On the cover: Pattern produced from white light by a computer-generated diffraction plate containing 529 square apertures arranged in a 23 × 23 array.
(R. B. Haver, Marshall Space Flight Center)

On the title pages: Aerial photograph of the Sinai Peninsula made by Gemini space craft. (NASA)

Included in this Dictionary are definitions which have been published previously in the following works: P. B. Jordain, *Condensed Computer Encyclopedia*, Copyright © 1969 by McGraw-Hill, Inc. All rights reserved. J. Markus, *Electronics and Nucleonics Dictionary*, 4th ed., Copyright © 1960, 1966, 1978 by McGraw-Hill, Inc. All rights reserved. J. Quick, *Artists' and Illustrators' Encyclopedia*, Copyright © 1969 by McGraw-Hill, Inc. All rights reserved. *Blakiston's Gould Medical Dictionary*, 3d ed., Copyright © 1956, 1972 by McGraw-Hill, Inc. All rights reserved. T. Baumeister and L. S. Marks, eds., *Standard Handbook for Mechanical Engineers*, 7th ed., Copyright © 1958, 1967 by McGraw-Hill, Inc. All rights reserved.

In addition, material has been drawn from the following references: R. E. Huschke, *Glossary of Meteorology*, American Meteorological Society, 1959; *U.S. Air Force Glossary of Standardized Terms*, AF Manual 11-1, vol. 1, 1972; *Communications-Electronics Terminology*, AF Manual 11-1, vol. 3, 1970; W. H. Allen, ed., *Dictionary of Technical Terms for Aerospace Use*, 1st ed., National Aeronautics and Space Administration, 1965; J. M. Gilliland, *Solar-Terrestrial Physics: A Glossary of Terms and Abbreviations*, Royal Aircraft Establishment Technical Report 67158, 1967; *Glossary of Air Traffic Control Terms*, Federal Aviation Agency; *A Glossary of Range Terminology*, White Sands Missile Range, New Mexico, National Bureau of Standards, AD 467-424; *A DOD Glossary of Mapping, Charting and Geodetic Terms*, 1st ed., Department of Defense, 1967; P. W. Thrush, comp. and ed., *A Dictionary of Mining, Mineral, and Related Terms*, Bureau of Mines, 1968; *Nuclear Terms: A Glossary*, 2d ed., Atomic Energy Commission; F. Casey, ed., *Compilation of Terms in Information Sciences Technology*, Federal Council for Science and Technology, 1970; *Glossary of Stinfo Terminology*, Office of Aerospace Research, U.S. Air Force, 1963; *Naval Dictionary of Electronic, Technical, and Imperative Terms*, Bureau of Naval Personnel, 1962; *ADP Glossary*, Department of the Navy, NAVSO P-3097.

McGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS, Fourth Edition

Copyright © 1989, 1984, 1978, 1976, 1974 by McGraw-Hill, Inc. All rights reserved. Printed in the United States of America. Except as permitted under the United States Copyright Act of 1976, no part of this publication may be reproduced or distributed in any form or by any means, or stored in a data base or retrieval system, without the prior written permission of the publisher.

3 4 5 6 7 8 9 0 DOW/DOW 9 5 4 3 2 1 0

ISBN 0-07-045270-9

Library of Congress Cataloging-in-Publication Data

McGraw-Hill dictionary of scientific and technical terms.

1. Science—Dictionaries. 2. Technology—Dictionaries.

I. Parker, Sybil P.

Q123.M34 1989 503'21 88-13490
ISBN 0-07-045270-9

For more information about other McGraw-Hill materials, call 1-800-2-MCGRAW in the Unit of States. In other countries, call your nearest McGraw-Hill office.

expands, utilized in riveters, diggers, pile ventilating systems.

of a substance capable of pressure; quantity. { kom'pres'əbil'it' }

region of disturbed wave. { kom'pres'əbil'it' }

The correction of the compressibility error.

error in the readings of indicator due to part of the pitot tube. { kom'pres'əbil'it' }

a product of the pressure by the product of the int; this factor may be account the departure so known as deviation compressibility factor.

which the fluid den-

ry to consider that the e that it has a constant

Gas flow when the

ough a system is large e, to cause a 10% or reser'ba'l flü'ad, flö'

data compression. ain of a device at one lower level of signal, be lost in background the system. 2. See

ing. [GEO] A sys- ne volume or shorten ne of a substance due type of stress which

len member. [MECH es'hən]

bance traveling in an es in volume and by 1 of wave movement. onal wave; pressure

{ kom'pres'hən, kā-

1. A means of con- hich a slotted tapered vo flanges are drawn center the shafts and nsmit medium loads. 'ən, kəp'lit' }

n which lubricant is em'pres'hən, kap } or collapse caused by mn or of wood fibers.

ment that measures ure. { kom'pres'hən }

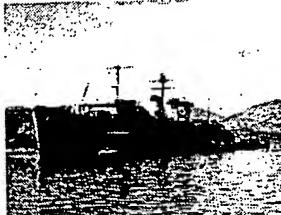
gnition produced by internal combustion res'hən ig'nishən }

diesel engine.

or. { kom'pres'hən }

n or other structural stress. { kom'pres'hən }

TENDER



Polaris submarine tender USS Hunley. (Official U.S. Navy photograph)

TENDRIL



Portion of a grape plant stem with leaf and tendril.

TENEBRIONIDAE



Representative species of family Tenebrionidae. (From T. I. Storer and R. L. Usinger, General Zoology, 3d ed., McGraw-Hill, 1957)

TENREC



Tenrec, showing characteristic features.

efficiency of a countercurrent cool-fluid-warm-fluid heat-exchange system. { 'ten-brük-ə,chrāt }

tendency [METEOROL] The local rate of change of a vector or scalar quality with time at a given point in space. { 'ten-dansē }

tendency chart See change chart. { 'ten-dansē ,chārt }

tendency equation [METEOROL] An equation for the local change of pressure at any point in the atmosphere, derived by combining the equation of continuity with an integrated form of the hydrostatic equation. { 'ten-dansē i,kwārzhān }

tendency interval [METEOROL] The finite increment of time over which a change of the value of a meteorological element is measured in order to estimate its tendency; the most familiar example is the three-hour time interval over which local pressure differences are measured in determining pressure tendency. { 'ten-dansē ,int̄rval }

tender [NAV ARCH] A naval auxiliary ship that serves as a mobile base for repair and limited resupply of other ships. { 'ten-dər }

Tendipedidae [INV ZOO] The midges, a family of orthorrhaphous dipteran insects in the series Nematocera whose larvae occupy intertidal wave-swept rocks on the seacoasts. { 'ten-dip'ēd-ə,dē }

tendon [ANAT] A white, glistening, fibrous cord which joins a muscle to some movable structure such as a bone or cartilage; tendons permit concentration of muscle force into a small area and allow the muscle to act at a distance. [CIV ENG] A steel bar or wire that is tensioned, anchored to formed concrete, and allowed to regain its initial length to induce compressive stress in the concrete before use. { 'ten-dən' }

tendonitis [MED] Inflammation of a tendon. { 'ten-də-nīt̄s }

tendon sheath [ANAT] The synovial membrane surrounding a tendon. { 'ten-dən ,shēth' }

tendril [BOT] A stem modification in the form of a slender coiling structure capable of twining about a support to which the plant is then attached. { 'ten-dril' }

tenebrescence [PHYS] Darkening and bleaching under suitable irradiation; materials having this property are called scotophors: darkening may be produced by primary x-rays or cathode rays, while bleaching may be produced by heat or by photons of appropriate wavelength. { 'ten-ə'bres̄ns }

Tenebrionidae [INV ZOO] The darkling beetles, a large cosmopolitan family of coleopteran insects in the superfamily Tenebrionoidea; members are common pests of grains, dried fruits, beans, and other food products. { 'ta-nebrē-ə'nōidēə }

Tenebrionoidea [INV ZOO] A superfamily of the Coleoptera in the suborder Polyphaga. { 'ta-nebrē-ə'nōidēə }

tenggara [METEOROL] A strong, dry, hazy, east or southeast wind during the east monsoon in the Spermunde Archipelago. { 'ten'gä-rə' }

teniae coli [HISTOL] The three bands comprising the longitudinal layer of the tunica muscularis of the colon: the tenia libera, tenia mesocolica, and tenia omentalis. { 'te-nē-ə 'kō-lē' }

tenantite [MINERAL] $(\text{Cu},\text{Fe})_2\text{As}_4\text{S}_{13}$. A lead-gray mineral crystallizing in the isometric system; it is isomorphous with tetrahedrite; an important ore of copper. { 'ten-ənt̄it̄ }

tenon [ENG] A tongue-like projection from the end of a framing member which is made to fit into a mortise. { 'ten-ən' }

tenorite [MINERAL] CuO . A triclinic mineral that occurs in small, shining, steel-gray scales, in black powder, or in black earthy masses; an ore of copper. { 'ten-ərīt̄ }

tenosynovitis [MED] Inflammation of a tendon and its sheath. { 'ten-ō-sin'ō-vīt̄s }

tenrec [VERT ZOO] Any of about 30 species of unspecialized insectivorous mammals which are indigenous to Madagascar and have poor vision and clawed digits. { 'ten,rek' }

Tenrecidae [VERT ZOO] The tenrecs, a family of insectivores in the group Lipotyphla. { 'ten'resə,dē' }

ten's complement [MATH] In decimal arithmetic, the unique numeral that can be added to a given N -digit numeral to form a sum equal to 10^N (that is, a one followed by N zeros). { 'tenz 'käm-plə-mənt̄ }

tensile bar [ENG] A molded, cast, or machined specimen of specified cross-sectional dimensions used to determine the tensile properties of a material by use of a calibrated pull test. Also known as tensile specimen; test specimen. { 'ten-səl ,bär' }

tensile modulus [MECH] The tangent or secant modulus of elasticity of a material in tension. { 'ten-səl,maj̄-gə-ləs' }

tensile specimen See tensile bar. { 'ten-səl,spes̄-əmən' }

tensile strength [MECH] The maximum stress a material subjected to a stretching load can withstand without tearing. Also known as hot strength. { 'ten-səl,stren̄gth' }

tensile stress [MECH] Stress developed by a material bearing a tensile load. { 'ten-səl,stres̄' }

tensile test [ENG] A test in which a specimen is subjected to increasing longitudinal pulling stress until fracture occurs. { 'ten-səl,test' }

tensimeter [ENG] A device for measuring differences in the vapor pressures of two liquids in which the liquids are placed in sealed, evacuated bulbs connected by a differential manometer. { 'ten-sim̄-ə-tər' }

tensiometer method [FL MECH] A method of determining the surface tension of a liquid that involves measuring the force necessary to remove a ring of known radius from the liquid surface, usually by means of a torsion balance. { 'ten-shē-əm̄-əd̄-ər,mēth̄d̄' }

tension [MECH] 1. The condition of a string, wire, or rod that is stretched between two points. 2. The force exerted by the stretched object on a support. { 'ten-shən' }

tension crack [GEOL] An extension fracture caused by tensile stress. { 'ten-shən ,krak' }

tension fault [GEOL] A fault in which crustal tension is a factor, such as a normal fault. Also known as extensional fault. { 'ten-shən ,fölt' }

tension fracture [GEOL] A minor rock fracture developed at right angles to the direction of maximum tension. Also known as subsidiary fracture. { 'ten-shən ,frak̄-char' }

tension jack [MIN ENG] A type of jack with a jackscrew for wedging against the mine roof and a ratchet device for applying tension on a chain that is attached to the tail or foot sections of a belt conveyor, and used to restore the proper tension to the belt. { 'ten-shən ,jak' }

tension joint [GEOL] A joint that is a tension fracture. { 'ten-shən ,jöint̄' }

tension packer [PETRO ENG] A device to pressure-seal the annular space between an oil-well casing and tubing, held in place by tension against an upward push; a type of production packer. { 'ten-shən ,päk̄-ər' }

tension pulley [MECH ENG] A pulley around which an endless rope passes mounted on a trolley or other movable bearing so that the slack of the rope can be readily taken up by the pull of the weights. { 'ten-shən ,pül̄-ē' }

tension-type hanger [PETRO ENG] A type of tubing hanger for multiple-completion oil wells, to allow for the varying lengths of tubing strings. { 'ten-shən ,tip̄ 'hānḡr' }

tension wood [BOT] In some hardwood trees, wood characterized by the presence of gelatinous fibers and excessive longitudinal shrinkage; causes trees to lean. { 'ten-shən ,wid̄' }

tensometer [ENG] A portable machine that is used to measure the tensile strength and other mechanical properties of materials. { 'ten-sōm̄-ə-tər' }

tensor [MATH] An object relative to a locally Euclidean space which possesses a specified system of components for every coordinate system and which changes under a transformation of coordinates. { 'ten-sər' }

tensor analysis [MATH] The abstract study of mathematical objects having components which express properties similar to those of a geometric tensor; this study is fundamental to Riemannian geometry and the structure of Euclidean spaces. Also known as tensor calculus. { 'ten-sər ,ə,nal-əs̄-əs̄' }

tensor calculus See tensor analysis. { 'ten-sər ,käl-kyū-ləs̄' }

tensor contraction [MATH] For a tensor having an upper and a lower index, summation over the components in which these indexes have the same value, in order to obtain a new tensor two lower in rank. { 'ten-sər ,kən'trək-shən' }

tensor differentiation [MATH] An operation on a tensor in which a term involving a Christoffel symbol is subtracted from the ordinary derivative, to obtain another tensor of one higher rank. { 'ten-sər ,dif̄-ə,ren̄-chē-ə-shən' }

tensor field [MATH] A tensor or collection of tensors defined in some open subset of a Riemann space. { 'ten-sər ,fēld̄' }

tensor force [NUC PHYS] A spin-dependent force between nucleons, having the same form as the interaction between magnetic dipoles; it is introduced to account for the observed

tensor force

values of the moment of tensorial stress associated undergo a samples are of a quantity tensor must makes it tensor who the given performed tensor presented by tensor. tensor space of a Riemann tentacula processes tions, and many animal tentacles. tentaculo of the arm a modify { ten-tak'-y } tentaculo: a hydrozo tented arc either an teristics of tented ice ice is pus cavity be ad 's } tentheron frame (tentheron can be co tentmet Tenthred in the sup portant s a,dē } Tentheron in the su tentillium training } om } tenting ice underneath. Tenuipa subordone TEP See tepeary } One of tance ir tepee b of soft tepee s ture co V in cr tepeati tephigr by Nat temper the char lines a is prop the pro tepeha ro } tephrit chiefly with s Tephri